Capital & Strategic Planning Committee

Item III - A

January 25, 2018

FY2019 Capital Budget Work Session

Washington Metropolitan Area Transit Authority

Board Action/Information Summary

◉ Action ○ Information	MEAD Number: 201946	Resolution: ◉ Yes ○ No

TITLE:

FY2019 Capital Budget Work Session

PRESENTATION SUMMARY:

In this session, staff will provide additional information on the proposed capital budget for the Committee's consideration.

PURPOSE:

Staff will provide the Committee with additional information in response to Board member questions for the a work session on the FY2019 proposed capital budget.

DESCRIPTION:

Key Highlights:

Following the General Manager/Chief Executive Officer's (GM/CEO) proposal of the FY2019 budget in November, the Finance and Budget Committee is convening work sessions to review the budget in greater detail. The Capital and Strategic Planning is convening a work session on the proposed capital budget.

Background and History:

The GM/CEO's proposed FY2019 budget totals just over $3.1 billion (including the $1.28 billion capital budget) and is grounded in Metro's three priorities: Safety, Service Reliability, and Financial Responsibility. The GM/CEO's Budget priorities:

- Fund safety, compliance and reliability improvements to drive ridership
- Deliver capital program investment to renew and preserve the system
- Encourage customers to ride through fare pass products
- No service reductions and no fare increases
- Fund legacy commitments, mandates and cost inflation while limiting operating subsidy growth to 3 percent ($29 million)
- Implement Management Actions to improve efficiency and reduce cost, including outsourcing where effective

The GM/CEO's $8.5 billion proposed FY2019-2024 capital program is focused on projects that improve the safety, reliability and state of good repair of Metro's infrastructure, equipment and other assets. The six-year investment plan is based on ongoing projects and prioritized system preservation and renewal needs from the Capital Needs Inventory. Metro and the region must invest an average of $1.5 billion of over the next ten years. Metro's annual capital investment will ramp up from current investment levels (approximately $1.2 billion) to over $1.5 billion annually by FY2022.

Following the presentation of the proposed budget, Metro Board members submitted follow-up questions to staff covering a range of topics. These questions are serving as the basis for public work sessions in January covering the operating and capital budgets.

Discussion:

Responses to Board member questions regarding the proposed FY2019 capital budget are included as an attachment. The presentation summarizes these questions into related topic areas.

FUNDING IMPACT:

No funding impact.

TIMELINE:

Previous Actions	November 2017 - GM/CEO proposal of FY2019 operating budget December 2017 - Request for two budget work sessions (operating and capital) and for authorization of public hearing
Anticipated actions after presentation	January - February 2018 - Public participation activities and budget public hearing March 2018 - Planned adoption of FY2019 budget

RECOMMENDATION:

Committee concurrence with proposed capital plan.

Work Session:
FY2019 Capital Budget

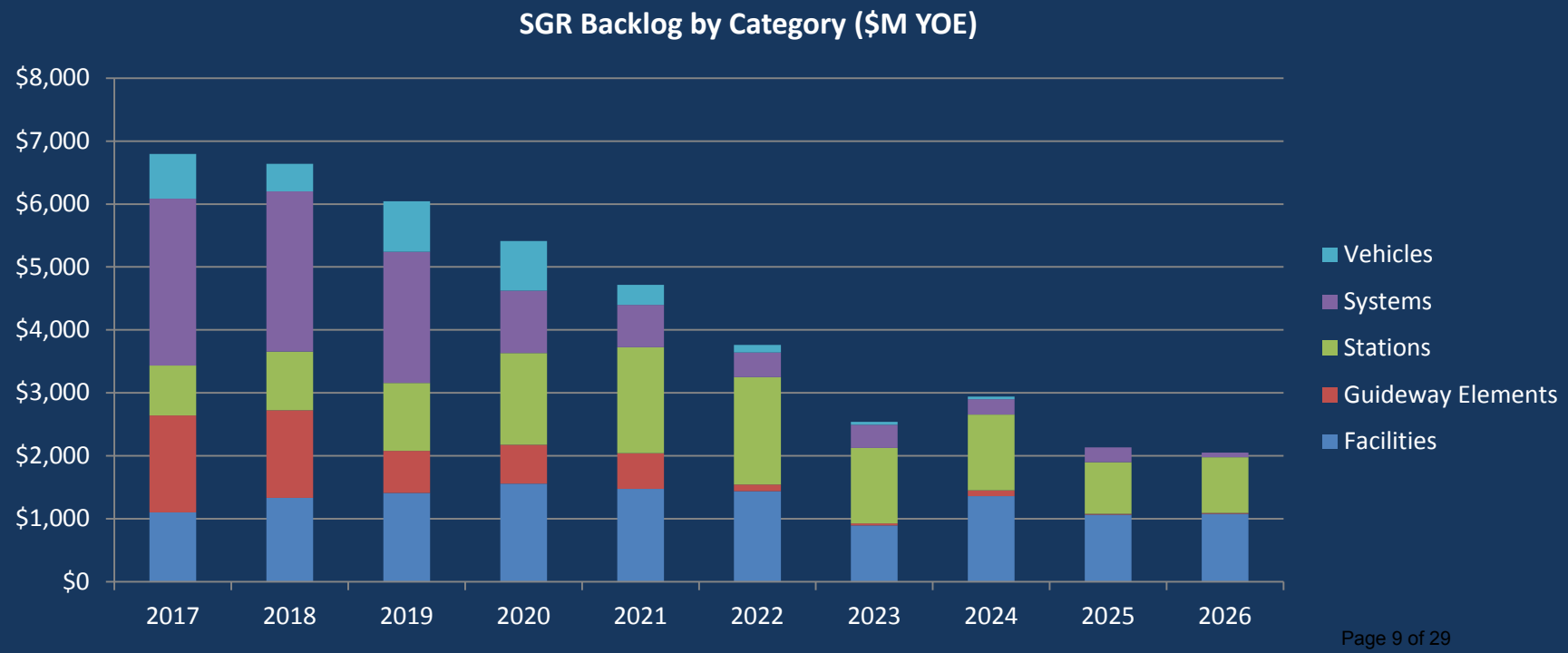
Capital and Strategic Planning Committee
January 25, 2018

FY2019 Budget Work Session

- Projected Funding Impact on State of Good Repair
- Transit Asset Management Plan
- Proposed FY2019 Capital Budget Overview
  - ✓ Railcar Acquisition
  - ✓ FY2019 Proposed vs. Current Approved Plan
  - ✓ Signals and Communications
  - ✓ Fare Collection Systems

Impact of Fully Funding GM Plan Against WMATA's State of Good Repair Needs

- All compliance-related new investments are funded
- Eliminates all assets scored as "poor conditions" (FTA score of "1")
- SGR backlog decreases to $2.05 billion by 2026



Source: Output from FTA's TERM Lite

Future Capital Programs to Be Aligned with Transit Asset Management Plan

TRANSIT ASSET MANAGEMENT MILESTONES		
TAM TARGET SETTING MILESTONES	Forecast	STATUS
Establish initial targets	January 2017	Completed
Establish FY18 targets	June 2017	Completed
Establish FY19 targets	June 2018	In Progress
TAM PLAN DEVELOPMENT MILESTONES		
Transit Asset Inventory and Condition Assessment Phase 1	January 2017	Completed
Capital Needs Inventory and Prioritization Phase 1	January 2017	Completed
Transit Asset Inventory and Condition Assessment Phase 2	March 2018	Completed
Asset Registry Established	November 2017	Completed
TAM Policy Update	December 2017	Draft Completed, awaiting QICO process completion
Enterprise Asset Management Initiative	February 2018	Scoping Underway
Capital Needs Inventory Update	April 2018	Data Improvement initiative kicked off
TAM Strategy Update	October 2018	TAM strategy will be a component of the final TAM plan
Develop and Submit TAM plan	October 2018	Anticipate completion in August for Board approval prior to October deadline.

Upcoming Program Milestones

• TAICA Phase II data collection complete	Jan. 2018
• Commence TAM strategy/implementation plan	Jan. 2018
• Enterprise Asset Management Plan commences	Feb. 2018
• New Capital Needs Inventory (CNI) published	Mar. 2018
• Begin FY2020 Capital Program development	Apr. 2018
• Governance and Capital Program Playbook complete	Jun. 2018
• Finalize TAM and submit to TPB (FTA requirement)	Oct. 2018

FY2019 Proposed Budget Priorities

- Fund safety, compliance and reliability improvements to drive ridership
- Deliver capital program investment to renew and preserve the system
- Encourage customers to ride through fare pass products
- No service reductions and no fare increases
- Fund legacy commitments, mandates and cost inflation while limiting operating subsidy growth to 3 percent ($29 million)
- Implement Management Actions to improve efficiency and reduce cost, including outsourcing where effective

FY2019 Proposed Capital Program by Category

Investment Category ($M)	FY2019 Proposed	FY2019-2024 Proposed
Railcars	$436	$2,165
Rail Systems	$185	$852
Track & Structures	$134	$1,196
Stations & Passenger Facilities	$248	$1,586
Bus & Paratransit Vehicles	$192	$1,757
Business Support	$84	$973
TOTAL	**$1,279**	**$8,530**

FY2019 Proposed vs. Current Approved Plan

Investment by Program *($ in millions)*	FY2019 Current Six-Year Plan	FY2019 Proposed Six-year Plan	Variance Inc. / (Dec.)	Reason for Change
Railcar	522.5	436.0	(86.5)	• Updated schedule for 2000/3000 series replacement • Preparation of new specifications for 8000 series railcars
Rail Systems	170.7	184.5	13.8	• Radio project ahead of previous forecast
Track and Structures Rehabilitation	108.6	134.0	25.3	• Acceleration of track maintenance equipment • New projects: Bridge Rehabilitation, Third Rail Reconfiguration, Tunnel water remediation
Stations and Passenger Facilities	274.2	248.2	(26.0)	• Updated work plan and schedule for Fare Collection System project
Bus and Paratransit	150.2	192.0	41.8	• Acceleration of replacement buses
Business Support	52.4	84.4	32.0	• Acceleration of roof replacement • Financial System upgrade • Updated schedule for service vehicles replacement
Total	**$1,278.6**	**$1,279.1**	**$0.5**	

Railcars

Program ($M)	FY2019 Proposed	6 Year Proposed
Acquisition	$289	$765
Maintenance/Overhaul	$116	$721
Maintenance Facilities	$31	$679
Total	**$436**	**$2,165**

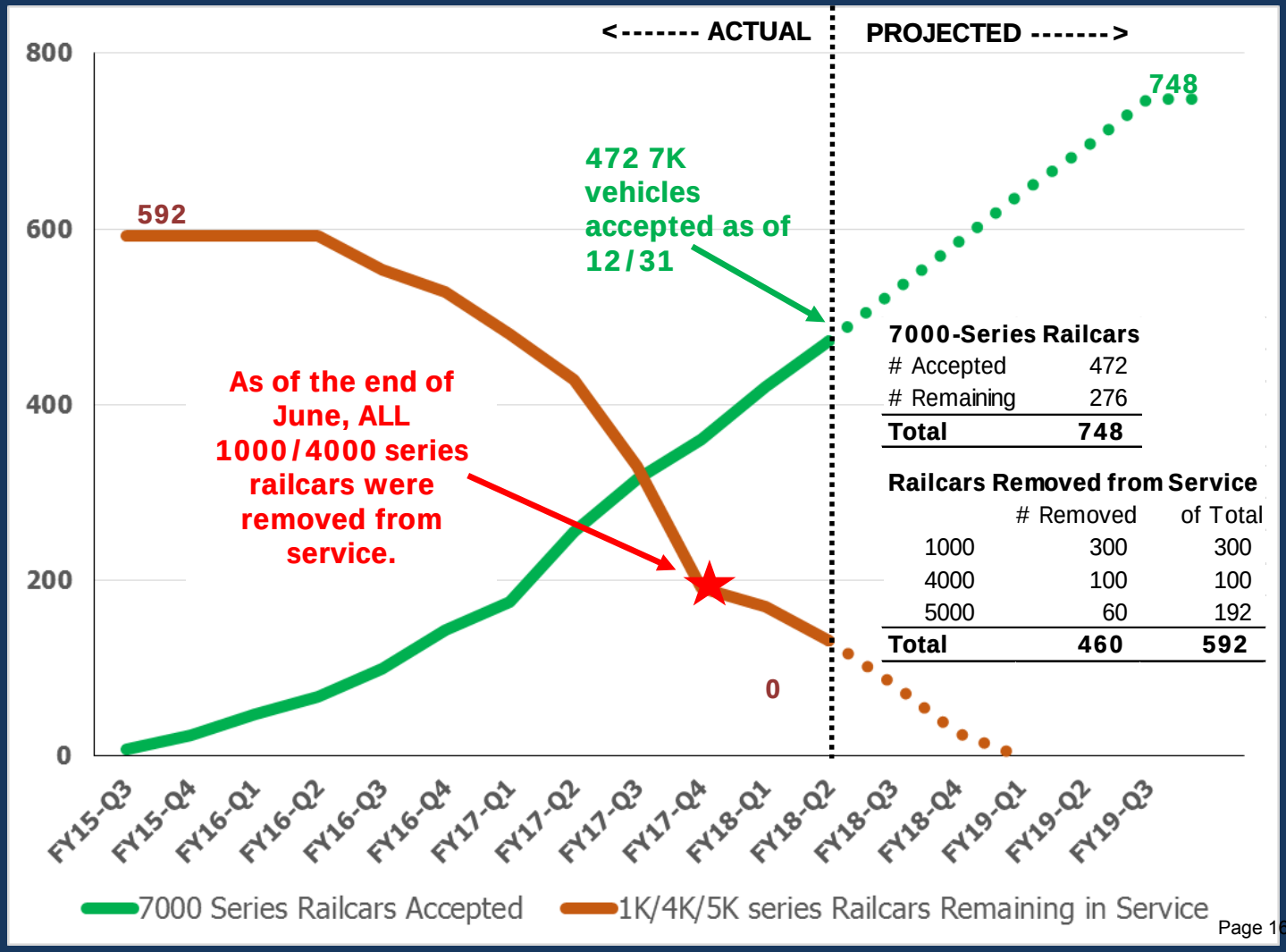
FY2019 Key Deliverables

- Acquisition of 164 new 7000 series railcars
- Continue railcar preventive maintenance and rehabilitation activities
- Continue using local funding for parts for railcar rehabilitation
- Complete repairs at Shady Grove and Branch Ave rail yards; rehab railcar lifts

6 Year Highlights

- 748 new 7000 series railcars in service
- 1000, 4000, and 5000 fleets replaced
- Start replacement of 2000/3000 fleets (8000 series vehicles)
- Focused investment in existing railcar fleet to improve safety and reliability
- Construction of new overhaul facility

7000 Series Railcars



7000-Series Railcars

# Accepted	472
# Remaining	276
Total	**748**

Railcars Removed from Service

	# Removed	of Total
1000	300	300
4000	100	100
5000	60	192
Total	**460**	**592**

7000 Series Railcar Acquisition Program

- Contract awarded to Kawasaki in July 2010 for the purchase of 748 railcars
- Payments based on completion of milestones; warranty and reliability payments continue after acceptance of the railcars

	Actuals	Forecast						
	Through FY17	FY18	FY19	FY20	FY21	FY22	FY23	Beyond FY23	Total
7000 Railcars Accepted	376	216	156						748
Kawasaki Costs	$765.4	$285.4	$261.6	$13.3	$99.3	$18.3	$22.2	$58.8	$1,524.3
Other 7000 Costs	$68.8	$39.9	$22.8	$4.4	$7.2	$20.5	$11.3	$9.6	$184.5
Total 7000 series cost	$834.2	$325.3	$284.4	$17.7	$106.5	$38.8	$33.5	$68.4	$1,708.8

Rail Systems

Program ($M)	FY2019 Proposed	FY2019-2024 Proposed
Propulsion	$66	$451
Signals & Communications	$119	$401
TOTAL	**$185**	**$852**

FY2019 Key Deliverables

- Complete underground installation of radio infrastructure on Blue/Orange Line
- Install 16 power quality meters, and replace 6 transformers
- Install 7 tie-breaker stations and 5 traction power sub-stations
- Track circuit replacement
- Pilot wayside-worker protection system
- Emergency Trip Station Replacement
- NTSB Safety Recommendations

6 Year Highlights

- Complete pilot of wayside-worker protection system
- Complete replacement of track circuits
- Continue traction power upgrades to support reliability and more 8-car trains
- Continue power system and automatic train control programs based on condition

Track & Structures

Program ($M)	FY2019 Proposed	6 Year Proposed
Fixed Rail	$98	$686
Structures	$36	$510
Total	**$134**	**$1,196**

FY2019 Key Deliverables

- Replace 12 switches and 13 miles of running rail
- Renew 23,500 direct fixation fasteners
- Remove and replace 13,000 crossties
- Replace 14,000 insulators
- Repair, mitigate, and eliminate tunnel leaks; rehabilitate 70,000 linear feet of drainage

6 Year Highlights

- Maintain track in a state of good repair with annual program to replace components including crossties, fasteners, switches, and insulators based on condition
- Complete water remediation and ventilation in tunnels
- Start bridge rehabilitation program
- Third rail reconfiguration

Stations & Passenger Facilities

Program ($M)	FY2019 Proposed	6 Year Proposed
Platforms & Structures	$110	$678
Vertical Transportation	$60	$335
Station Systems	$78	$574
Total	**$248**	**$1,586**

FY2019 Key Deliverables

- Replace 15 escalators, rehabilitate 16 escalators, rehabilitate 13 elevators
- Drainage improvements at 8 locations
- Replace station chillers and cooling towers
- D&E Gallery Place station capacity and circulation
- Begin platforms rehabilitation

6 Year Highlights

- Continue reinvestment in elevators and escalators
- Rehabilitation of parking facilities
- Station lighting renewal
- Gallery Place capacity and circulation improvements
- Grosvenor garage expansion
- D&E L'Enfant Plaza station capacity improvements

Fare Collection System

Program Goals:

- State of good repair and reliability of existing fare collection equipment and systems
- More effective user interfaces on devices and equipment
- Shift to more self-directed customer service
- Investments in wmata.com website
- Initiating work on a mobile application

Bus & Paratransit

Program ($M)	FY2019 Proposed	6 Year Proposed
Bus & Paratransit Acquisition	$95	$695
Bus Overhaul & Maintenance	$61	$389
Bus Maintenance Facilities	$32	$413
Bus Passenger Facilities	$5	$260
Total	**$192**	**$1,757**

FY2019 Key Deliverables

- 100 replacement CNG buses
- Continue bus rehabilitation and repair
- Acquire 225 Paratransit vans
- Complete construction of Andrews Federal Bus Garage
- D&E bus garage rehab/replacement

6 Year Highlights

- Sustain bus and paratransit fleet through annual replacement and rehabilitation
- Rehab/Replacement of Bladensburg and Northern bus garages
- Evaluation of construction of new bus garages

Business Support

Program ($M)	FY2019 Proposed	6 Year Proposed
IT	$55	$341
MTPD	$1	$8
Support Equipment & Services	$28	$624
Total	**$84**	**$973**

FY2019 Key Deliverables

- Continue roof rehabilitations and replacements
- Begin development of financial system upgrade
- Modernize work order system

6 Year Highlights

- Rehabilitate and repair facility roofs across Metro system
- Consolidation of WMATA office facilities
- Complete financial system upgrade
- Continue investment in hardware and required software improvements to support business operations

Recommendation

- Approve Committee resolution endorsing the contents of the capital plan and referring the plan to the Finance and Budget Committee for inclusion into the FY2019 capital budget

Washington Metropolitan Area Transit Authority
FY2019 Proposed Capital Budget
Board Member Questions and Answers

1. **Is it anticipated that delivery of 7K cars will be completed in the FY2019 Budget? If so does the development and analysis of 2k/3k depend on all 7K's being operational? (Virginia)**

   All 748 of the 7000 series railcars are expected to be delivered by the second half of FY2019. The 7000 series railcars delivered to date allowed WMATA to retire the 1000 and 4000 series railcars and to provide service on the Silver Line. The railcars remaining to be delivered will enable WMATA to retire the unreliable 5000 series railcars from passenger service. Legacy fleets that will remain in service at that time will consist of the 2000, 3000, and 6000 series railcars.

   The 2000 and 3000 series railcars, which were overhauled between 2003 and 2008, will reach the end of their useful life over the next six years and will need to be replaced. WMATA plans to replace these cars with new 8000 series railcars. Development of the 8000 series technical specification is underway and is not contingent upon the 7000 series delivery schedule. Modifications and improvements to the current 7000 series technical specifications will be based on WMATA's experience testing and operating the 7000 series railcars. The current schedule for the 8000 series railcar acquisition assumes design efforts will continue through solicitation in FY2019 with contract award in FY2020. The timeframe for the manufacture and delivery of the railcars will be determined during this planning phase. WMATA plans to structure the 8000 series program similar to the 7000 series program with an initial base order and options to increase the size of the purchase if necessary and desirable. WMATA is conducting ridership analysis and forecasts that will inform an update to the Metrorail Fleet Plan and long-term fleet requirements. Factors that will impact the size of the 8000 series railcar procurement include, but are not limited to, ridership forecasts and projected peak-period service levels.

2. **Can railcar acquisition and or payment be deferred in order to "smooth the curve" between the FY2019 and FY2020 budgets? (Maryland)**

   WMATA awarded a multi-year contract to Kawasaki for the procurement of 7000 series railcars in June 2010. The total value of the contract for the 748 new railcars is approximately $1.5 billion. The total cost of the project including engineering services, spare parts, and project management is approximately $1.7 billion. The 7000 series railcars improve safety and service reliability through replacement of the 1000, 4000, and 5000 series legacy cars with modern railcars and increase the size of the fleet to operate the Silver Line extensions.

   Through December 2017, 488 railcars have been delivered and $967 million has been expended. The remaining 260 vehicles will be delivered through the second half of FY2019 at a cost of $451 million. Additionally, the contract includes spare parts, warranty and final acceptance payments of $290 million which will continue through FY2025.

   New 7000 railcars are significantly more reliable than the legacy cars they replace. Any deferral of the delivery of new railcars would negatively impact the overall reliability of WMATA's service for customers as legacy railcars age and become more difficult to maintain. In addition, the railcar acquisition expenditure forecast is based on milestones established in the contract between WMATA and Kawasaki.

Actions to defer the delivery of railcars or modify the payment schedule would likely result increased costs to WMATA. These additional costs would be borne by the jurisdictions as FTA will not fund project delay costs.

3. Has there been any analysis of the Federal Budget as it stands on Federal grants, etc. on FY19 Budget? (Virginia)

The FY2019-2024 Proposed Budget assumes that Federal formula funding will continue at current levels, and that PRIIA funding ends after FY2020, as well as jurisdictional investment increases significantly to address more of the system's safety, state of good repair, and reliability needs. The following is an analysis of current topics related to the Federal Budget:

Federal Fiscal Year 2018, Congress continues to work on the FFY2018 Appropriations bills. The current continuing resolution (CR) expires on Friday, January 19. Congress is expected to continue appropriations work in January and enact another continuing resolution to avoid shutdown. In addition, House and Senate negotiators continue to work on a broad two-year budget agreement that would increase spending caps for both defense and domestic discretionary programs, and avoid across-the-board sequestration cuts mandated under the Budget Control Act.

PRIIA Funding, it is anticipated that $150 million for WMATA, as authorized by PRIIA, will be included in the 2018 federal funding bill (however, should sequestration take effect, this amount would be reduced). WMATA is working with the region's Congressional delegation to ensure that the tenth year of this funding is included in the FFY2019 bill, and are also working to promote a long-term reauthorization of the PRIIA funding.

Rep. Comstock recently introduced a bill (Metro Accountability and Reform Act) that would reauthorize PRIIA funding for FFY2019 through FFY2029 contingent upon governance and labor reforms. Rep. Delaney has also introduced legislation (WMATA Improvement Act) that would reauthorize PRIIA funding, through FFY2018 through FFY2028, contingent upon governance and labor reforms.

4. When does Metro Matters end for our jurisdictional partners? (Virginia)

The Metro Matters agreement ended on June 30, 2010 for all jurisdictional partners. Metro Matters was replaced by the FY2011-2016 Capital Funding Agreement (CFA). Debt service contribution requirements for debt issued during Metro Matters rolled into the CFA for those jurisdictions that opted in to that debt issuance. There have been two one-year extensions of the CFA covering the FY2017 and FY2018 capital budgets. These extensions provided annual jurisdictional funding for the capital program as the region considers options for long-term funding for Metro's capital needs.

The CFA provides the framework for jurisdictional investment in the CIP, including match to federal formula and discretionary grants, additional state and local contributions, and Metro's short- and long-term debt strategies. The current CFA expires on June 30, 2018 and, absent any action to establish a dedicated revenue source for Metro's needs, the agreement must be extended in order to continue Metro's capital program without interruption.

5. Detail the projects included in the signals and communications budget causing the drastic increase in FY2019, specifically when ATO needs have not yet been determined by the contracted safety analysis. (Maryland)

The Signals and Communication program supports the ongoing rehabilitation and upgrades of the systems that locate and direct Metrorail trains, wireless systems used by Metro employees, safety personnel, and first responders and wireless communication systems for cellular access in tunnels and underground stations.

WMATA's automatic train control system is made up of components that work together to guide trains. These include track circuits, modules, non-vital processors, switch machines, cabling, junction boxes, and other associated equipment.

WMATA's employee and first responder communication system includes an above ground and underground radio system. WMATA currently operates on a 400 mhz system which is being phased out to upgrade to a 700 mhz system to be in compliance with FCC regulations. This effort will also include the installation of an underground cellular system which will allow Metrorail customers the ability to use their cellphones in the tunnels. This major project is forecasted to cost approximately $300 million and is scheduled to be completed in FY2022.

The increase for FY2019 in the proposed FY2019-2024 plan compared to the FY2018-2023 approved budget, is $6 million. This increase is primarily related to the Radio Infrastructure Upgrade project. The project is expected to complete work faster than was previously forecasted.

This category also includes a pilot Track Inspector Location pilot program. The scope and schedule for this project, which is funded through an FTA research and development grant, has been finalized and work is underway. Pending the outcome of the pilot a decision will be made with respect to a larger track location awareness project.

With respect to WMATA's future ATC/ATO needs, when these needs have been identified, studied, alternative analysis are complete and scopes, schedules and budgets are defined they will be advanced through the CIP. The proposed CIP includes an allocation of out-year funding for these potential projects.

6. Explain the significant shifting of project dollar allocations between the FY 2018 approved CIP and the FY2019 proposed CIP. Can similar re-assessments be made prior to budget approval to mitigate the significant budget increase in FY2019? (Maryland)

The $8.5 billion FY2019-2024 Proposed Capital Program represents an increase of $1.1 billion compared to the FY2018-2023 capital plan. It focuses WMATA's capital investment on strengthening the safety, reliability and state of good repair of WMATA's infrastructure, in accordance with the GM/CEO's plan to Keep Metro Safe, Reliable and Affordable.

The following are the major changes for FY2019 between the proposed FY2019-2024 and the currently approved FY2018-2023 plans:

Investment by Program ($ in Millions)	FY2019 Current Six-Year Plan	FY2019 Proposed Six-Year Plan	Variance Inc./ (Dec.)
Railcar	522.5	436.0	(86.5)
Rail Systems	170.7	184.5	13.8
Track and Structures Rehabilitation	108.6	134.0	25.3
Stations and Passenger Facilities	274.2	248.2	(26.0)
Bus and Paratransit	150.2	192.0	41.8
Business Support	52.4	84.4	32.0
Total	**$1,278.6**	**$1,279.1**	**$0.5**

- **Railcars –** The reduction in the proposed FY2019 work plan for railcars is due to a change in the assumption for the acquisition of additional railcars. The previous plan assumed that WMATA would significantly accelerate the purchase of additional railcars. After further consideration of fleet short and long-term requirements, staff determined that the preferred path is to update the existing railcar specifications first and then initiate a new procurement for an 8000 series vehicle. This assumption change shifts projected railcar expenditures to the out-years of the program and beyond the six-year period.
- **Rail Systems –** The primary drivers for the increase in the rail systems program are for an increase in forecasted expenditures for the Radio Infrastructure Upgrade project and the Traction Power and AC Power system preservation programs. The Radio Infrastructure Upgrade project is now expected to achieve substantial milestone payments during FY2019 previously forecasted to occur in future budget years. The proposed CIP assumes increased production levels to address state of good repair backlogs through the AC Power and Traction Power system preservation programs. Additional internal resources have been identified and dedicated to these efforts and planned procurements are underway or have been completed which will allow these programs to increase production levels in FY2019.
- **Track and Structures -** The increased investment plan for the Track and Structures program is driven by an acceleration in the planned purchase of track maintenance equipment and increased funding allocations for new projects currently in the Development and Evaluation and pilot phases including the tunnel water remediation program, bridge structural rehabilitation efforts, and a pilot for a reconfiguration of third rail equipment and infrastructure.
- **Station and Passenger Facilities –** The reduction in this program is primarily associated with changes to the planned implementation of a project to maintain and upgrade the fare collection system. The six-year plan still includes funding for this project however, an updated schedule results in forecasted investment shifting out of FY2019 and into future years.
- **Bus and Paratransit –** The increase in the proposed investment plan for this program is associated with a change in the procurement plan for the current bus acquisition schedule. WMATA now plans

to award a new multi-year bus contract in the latter part of FY2018 and take delivery of replacement buses in FY2019. The previous plan assumed a longer procurement process and that no delivery of buses until FY2020. The plan also includes an increase to cover an increase in the cost of paratransit vehicles above previous estimates.

- **Business Support –** Increases to the business support program include accelerated rehabilitation and replacement of roofs at WMATA facilities, funding for upgrade to WMATA's financial system, and increases for MTPD vehicles and heavy duty work equipment.

7. When will WMATA present a more detailed plan to the Board for replacement of the Fare Collection System? Many elements of the system now exceed their useful life. What will the $244 million budgeted for this action buy WMATA? (District of Columbia)

Staff is finalizing the Authority's fare collection system needs and anticipates making that presentation to the Board in Spring 2018.

WMATA's fare payment infrastructure and related systems are dated and in need of maintenance and reinvestment. To that end, today WMATA is taking a two pronged approach of first maintaining field equipment in an operational state of good repair to solve day-to-day issues; and second, finalizing plans for new investments to better serve our customers in the years ahead.

Examples of improvements to day to day system reliability include:

- replacement of a key electronic component in the farebox to improve operational reliability;
- installation of updated SmarTrip targets system-wide in the faregates and fare vendors to improve operations;
- replacement of faregate barrier control arms as necessary to maintain passenger throughput; and
- replacement of power and communication cables to the faregates to provide stable power and updated communications capability in advance of new faregates.

Beyond day to day investments, the new capital investments will focus on more effective and contemporary user interfaces on systems, devices and equipment supporting the shift to a greater reliance on self-directed customer service; improving equipment reliability to reduce both down time and operating costs; and, improve designs to reduce the opportunity for fare evasion.

New investments currently programmed include:

- improvements in the wmata.com website and development of a mobile application;
- new faregates system-wide;
- new fare vendors and exit fare machines system-wide, both of which will process debit and credit card transactions;
- new bus fareboxes integrated with other on-board bus systems;
- new fare collection operating system software replacing the current system; and,
- expanded retail distribution network for fare media.

Staff is coordinating regionally on the vision and goals of other transit partners in the SmarTrip consortium to ensure integrated mobility throughout the National Capital Region.